Course: COMP 182
Term: Spring 2015

Instructor Contact Information

Instructor: Luay Nakhleh
Office: Duncan Hall 3119
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Office Hours: Friday, 9:30 – 10:50 am and 1:00 – 1:50 pm

Course Objectives and Learning Outcomes

The objective of the course is to introduce Algorithmic Thinking as a way of problem solving. To achieve this, the course teaches discrete mathematics and algorithms in the context of real-world applications. The goal is for students to learn the foundations on which most of computer science is built and to understand the interplay between mathematics, algorithms, and programming.

Required Texts and Materials

The required textbook is "Discrete Mathematics and Its Applications" (7th Edition) by K. Rosen. McGraw-Hill.

The topics we cover include:

- The foundations: Logic and proofs
- Basic structures: Sets, functions, sequences, sums, and matrices
- Algorithms and algorithmic techniques: Brute-force, graph exploration, divide-and-conquer, greedy algorithms, dynamic programming, heuristic searches, and probabilistic algorithms
- Complexity of algorithms and asymptotics
- Induction and recursion
- Counting
- Discrete probability
- Relations
- Graphs and graph algorithms
- Trees

Exams and Papers

There are two scheduled exams:

- A midterm: February 25, 2015, 7:00 – 10:00 pm
- A final exam: Scheduled by the registrar's office (3 hours)

There is a set of 6 homework assignments, as well as weekly assigned reading and associated quizzes.

Grade Policies

- Midterm: 20%
- Final: 30%
- Homework assignments: 40%
- Assigned reading and associated quizzes and attendance: 10%

Assignment of letter grades will be no stricter than the following:

- A: final grade ≥90
- B: 80 ≤ final grade < 90
- C: 70 ≤ final grade < 80
- D: 55 ≤ final grade < 70
- F: final grade < 55

Absence Policies

Attendance will be taken on randomly selected days. It is the student's responsibility to inform the instructor, ahead of time if possible, about absences.

Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

The course website has additional requirements regarding code and collaborations.

Disability Support Services

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change with advanced notice.